



# New Mexico Tech

## Environmental Finance Center

### 2004 Annual Report of the Environmental Finance Center Network

### Region 6 – EFC at the New Mexico Institute of Mining and Technology

*The New Mexico EFC was established in 1992 as the first  
Environmental Finance Center*

#### INTRODUCTION

The Environmental Finance Center serving EPA Region 6 (NM EFC) completed its first full year as a program of the New Mexico Institute of Mining and Technology (New Mexico Tech) in 2004. The NM EFC experienced a significant growth in both staff and program activities in 2004. Three new full-time staff members were hired, bringing the total staff to 9.

The NM EFC's core mission is to help state, local, and tribal governments meet environmental infrastructure needs and regulatory compliance through state and local capacity building and technical information transfer. Capacity building includes enhancing technical, managerial, and financial capabilities to achieve consistent and sustainable regulatory compliance and to develop sustainable infrastructure.

The NM EFC assists in local capacity building by:

- Examining alternative approaches to meeting regulatory compliance or environmental infrastructure needs
- Empowering communities to act as the “drivers” for their own projects
- Assisting with procuring professional services
- Presenting funding alternatives
- Acting as a bridge between federal, state, local and tribal governments
- Presenting neutral analyses of issues or projects
- Gathering stakeholder input

The NM EFC has been extremely active over the past year and has experienced significant growth in its program activities. The major projects that were active or completed in 2004 include the following. Each of these activities is described in more detail below.

- Capacity Development Activities for Region 6 states
- Capacity Development Program for New Mexico
- Capacity Development for Tribal Water Systems
- Tribal Operator Certification Program
- Pilot Project: Feasibility Analysis of Water Supply for Small Public Water Systems
- Resource-Based or Unified Source Water Protection Project
- Independent Analysis of FCS Leak Detection Technology for Albuquerque
- Water System Collaboration Pilot Project for New Mexico
- Water System Collaboration Project for New Mexico
- Public Management Finance Program

## ACCOMPLISHMENTS

### Capacity Development Activities for Region 6 States

During 2004, the EFC continued to assist the EPA Region 6 states of Arkansas, Louisiana, New Mexico, Oklahoma, and Texas with the implementation activities associated with capacity development strategies, as required under the 1996 Safe Drinking Water Act (SDWA) amendments. This work included activities in three different categories as described below.

- **Technical Information Gathering and Transfer**

The EFC attended workshops and conferences to present papers, interact with states and technical experts, and gather information on techniques, approaches, and tools that could be used by the states. The types of workshops included asset management, capacity development, drought management, and water conservation.

- **Capacity Development Implementation Assistance to Region 6 States**

The NM EFC worked with the EPA Region 6 states on capacity development assistance, including extensive discussions with the New Mexico Environment Department (NMED) on ways to improve their capacity development program, particularly in capacity assessments, prioritization of water systems, and potential water system assistance. These discussions lead to a bigger effort under a separate contract with NMED. In addition, the NM EFC has been working with New Mexico state funding agencies on a coordinated funding effort.

In Texas, the NM EFC has held phone calls and been in meetings with the Texas Commission on Environmental Quality to share information regarding capacity activities in other states. In addition, the NM EFC also worked with TCEQ on a project involving non-compliant small water systems under a separate contract.

In Arkansas, the NM EFC has been discussing the possibility of creating a capacity development training for Arkansas Department of Health (ADH) staff. This training will be an interactive program that will include classroom lecture and hands-on activities.

In Louisiana, the NM EFC participated in the Louisiana Department of Health and Hospitals (DOHH) Water Quality Technology Conference and held meetings with the state on capacity development issues.

In Oklahoma, the NM EFC met with capacity development staff from the Department of Environmental Quality at the capacity development conference to discuss capacity issues.

- **EFC Network Assistance**

The NM EFC works with the other Centers in the Network on projects, answering questions, providing information, or anything else needed. The NM EFC also

attends the Environmental Financial Advisory Board (EFAB) meetings twice a year as well as the EFC Director's meetings.

### **Capacity Development Program Assistance for New Mexico Environment Department**

In 2004, the NM EFC received a contract from the NM Environment Department (NMED) to assist with revisions to the NM capacity development program. The revisions cover three main areas: a) revised capacity assessment procedures, b) new prioritization program, and c) training of NMED staff.

The NM EFC developed a three tiered approach to capacity assessment. The systems are prioritized into the tiers based on factors such as: compliance history, customer complaints, requests for funding, drought concerns, or other known problems or issues with the systems. The systems with the greatest concerns are placed in Tier 1, those with minimal concerns are placed in Tier 2, and systems with no known concerns are placed in Tier 3. The assessment process is then geared to the need to have information. Systems in Tier 1 require a significant amount of information, so they receive a very in-depth assessment process that requires interviews and multiple days to complete. Tier 2 is a questionnaire that takes approximately 2 hours to complete and Tier 3 is a short questionnaire that takes about 30 minutes over the phone to complete. The NM EFC will be conducting approximately 250 assessments during this contract.

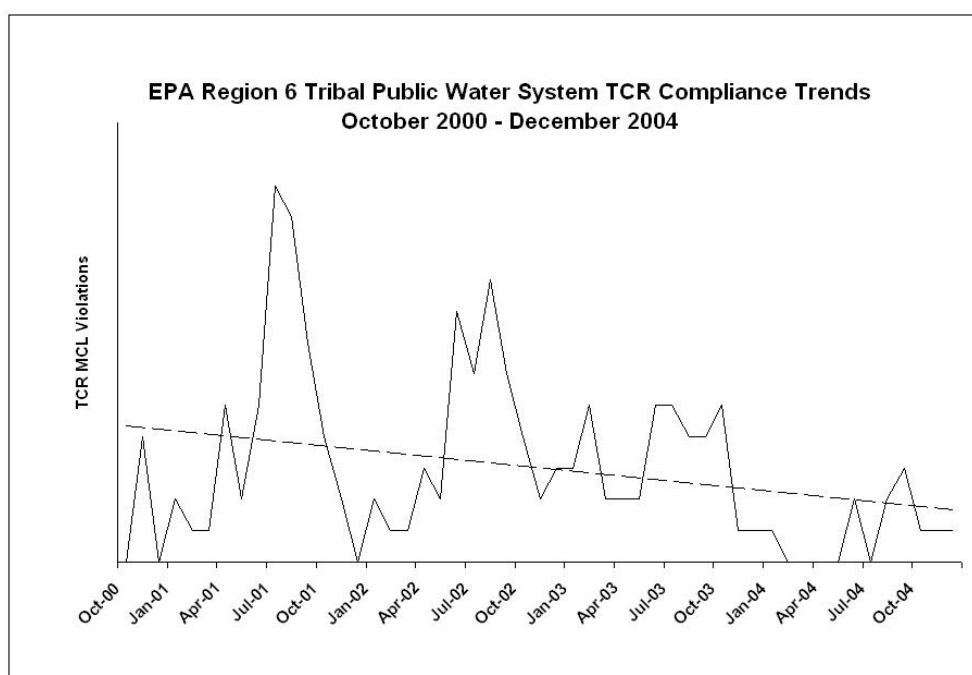
The new prioritization process will involve gathering data from Safe Drinking Water Information Systems, the capacity assessments, and other sources to determine which systems have a need for funding and where they should be ranked on the priority list.

The final component of the project is to train NMED field staff to take over the assessment process. The training will also involve managerial and financial capacity in general.

### **Strengthening Public Health Protection Through the Multiple Barrier Concept**

In 2004, the NM EFC continued its efforts to assist Tribal water systems in improving public health protection. The NM EFC continued to frame the assistance in terms of maximizing the use of each of the barriers – source, treatment, and distribution. Water system managers and operators need to make effective use of each of these barriers to prevent contamination from entering the system or reaching the customers.

One of the measurements of the overall effectiveness of the program is the compliance record of the Tribal water systems. The NM EFC and EPA Region 6 developed a graph that plots the number of Total Coliform Rule violations by month. The trend line of this graph is clearly downward and continues to improve each year. There continues to be spikes in the number of violations in the summer months, but the peaks are decreasing each year. The NM EFC plans to provide assistance and training to the water systems to continue to reduce the summer peaks. The graph below shows the compliance trends from 2000 through 2004.



A summary of the various activities of the NM EFC in assisting Tribal water systems is presented below.

- **Compliance Monitoring and Technical Assistance:** The NM EFC coordinates the sampling required under the Safe Drinking Water Act. The NM EFC also assists with the development of Consumer Confidence Reports, Total Coliform Rule compliance and sampling plans, and operation and maintenance support and troubleshooting.
- **Managerial and Financial Capacity Building:** The NM EFC assists tribes with utility ordinances and by-laws and rate setting and budgeting.

- **Public Education and Outreach:** The NM EFC assists with the development of educational display boards, brochures, pamphlets or handouts and participates in community events, such as environmental, health, and water fairs.
- **Information Management Activities:** The NM EFC gathers information for EPA Region 6 regarding system inventories, new system information, populations, system classification, and other necessary information.

Under these broad headings, the EFC has provided a wide array of assistance including: promoting the development of utility boards, setting utility rates, developing public education campaigns on the need to charge for water, assisting with sampling and analysis, sharing information regarding potential funding sources, providing training classes, helping with preparation of Consumer Confidence Reports, and many others. A particular focus of this year's program was to reduce the occurrences of "summer hits." During the warmer summer months, the number of Total Coliform hits generally increases. The EFC is offering training and assistance to try to reduce these occurrences.

***"Beyond Compliance Program"*** The fact that the compliance situation has improved dramatically over the past 5 years has provided the opportunity to move the assistance activities to the next level. The NM EFC has now fully implemented its "beyond compliance" program to encourage tribes to make improvements beyond simply doing the minimum to meet compliance. These efforts are aimed at optimizing water system operation. Activities in this area include the following:

- **Multiple Barrier Evaluations and Associated Training:** Multiple Barrier Evaluation training is similar to sanitary survey training, but it is presented from an operator focus, rather than a regulatory focus. It is intended to present the "big picture" to operators and to help them understand the reason why sanitary deficiencies are a problem. In addition to the training, the NM EFC performs Multiple Barrier Evaluations (MBEs) on water systems. These MBEs are voluntary and identify potential health and safety concerns with the water systems. A report is presented to the system, describing the potential concerns along with a picture and an explanation of why it is an issue.
- **Groundwater Comprehensive Performance Evaluations:** Groundwater Comprehensive Performance Evaluations (CPEs) provide a snapshot picture of whether or not a water system is fully optimized in all three barriers (source, treatment, distribution) and provides an indication of what factors are preventing the system from being fully optimized if it is not meeting all of the optimization goals. In the upcoming year, the NM EFC intends to link the MBEs with CPEs for a more comprehensive approach.



- **Performance Based Training:** For the past 18 months the NM EFC has been working with Process Applications, Inc. and EPA Region 6 on Performance Based Training (PBT). This training is intended to provide water operators with the skills necessary to conduct water system studies, troubleshoot problems, collect and analyze water quality data, and communicate more effectively with management. Six Pueblos participated in the program.

*Participants Presenting Homework**Participants Conducting Field Test**Learning Pump Calibration*

### **Tribal Operator Certification Program**

In January 2003, the NM EFC gave its first Region 6 Tribal Water Operators Certification Exam. Since that time, the EFC has been providing Operator Certification Exams approximately every quarter (in some cases additional exams were given to meet tribal operator needs.) In the past year, eleven operators have received certification and one operator has applied for and received reciprocity. This program is only open to operators of tribal drinking water systems in EPA Region 6.

In addition to the Operator Certification Exams, the Tribal Operator Certification Program includes three other activities which are described in more detail below.

**Tribal Utility Advisory Committee:** As part of the initial development of the Operator Certification Program, the NM EFC formed a Tribal Utility Advisory Committee (TUAC). Membership was open to all Tribes and Pueblos in Region 6. After the completion and approval of the Operator Certification Guidelines, the TUAC is now focused on review of the training program, modifications to the guidelines, proposals for future activities, and the annual review of the program.

**Pathway to Certification Training:** The NM EFC led a class of 17 water operators through a year long training program to prepare them to take the Level 1 operator certification test. The classes were held approximately every 3 weeks and included lecture, field activities, homework assignments, and reading assignments.

*Classroom Session**Field Activity**Newly Certified "Pathways" Participant*

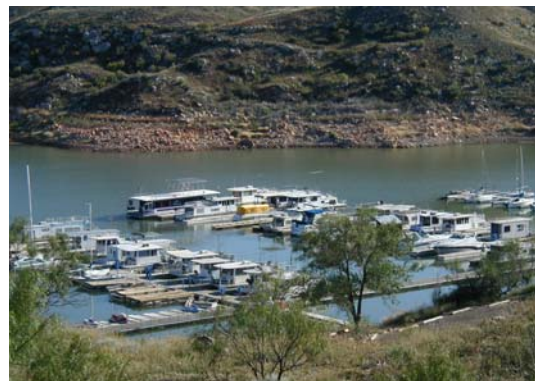
**Gap Certification Training:** The NM EFC provides training opportunities for Tribal water operators to fill voids or needs that are not being met by other training providers. The topics for these classes are suggested by Tribal operators through surveys, based on responses provided on evaluation forms for other EFC trainings, suggestions of the TUAC, or based on observed needs. During 2004, the EFC held gap trainings on the Safe Drinking Water Act Regulations, Disinfection, Sampling, and Total Coliform Rule Compliance.

### **Resource-Based or Unified Source Water Protection Project**

The EFC Network completed its Resource-Based Unified Source Water Protection Project in June of 2004. As the lead EFC for this project, the NM EFC worked with the EFCs in Maryland, North Carolina, Boise State and New York, to develop resource-based or unified source water protection plans for clusters of communities in 8 different states.

This project involved assistance in the following: the development of a source water protection group, the examination of potential sources of contamination, determining appropriate source water protection measures that may minimize or eliminate contamination concerns, preparing a unified source water protection plan, and implementing the plan. The EFCs facilitated stakeholder meetings and provided technical information transfer.

The eight states involved in the EFC project include: New York, Maryland, West Virginia, North Carolina, Texas, Colorado, Idaho, and Oregon. The NM EFC conducted the projects in Texas and Colorado. The Texas project includes water systems around Lake Meredith. This lake is operated by the Canadian River Municipal Water Authority (CRMWA) and



Lake Meredith and Boat Marina



supplies water to Amarillo and Lubbock and 9 other communities. The major concerns for source water protection on this project include: oil drilling and exploration, ranching, recreational uses of the lake, and septic systems around the lake.

The project in Colorado focused on the systems that pull water out of the Boulder Feeder Canal. This open canal supplies water to the City of Boulder and a few smaller towns nearby. The open canal is exposed to runoff from agricultural and residential areas as well as recreational impacts. There is a proposal to increase the recreation in this area that in turn would increase the potential for source water impacts. This issue was a main focus of the source water protection project.



GPS location of potential source of contamination

### **Independent Analysis of FCS Leak Detection Technology for Albuquerque Bernalillo County Water Utility Authority**

The Albuquerque Bernalillo County Water Utility Authority has received a grant from the Governor's Innovative Fund to investigate a proactive leak detection technology. This technology is being installed and operated by FCS Services. The approach involves installing data loggers (pictured below) on top of meters within the water system. The data loggers listen for leaks in the middle of the night to determine if there is a potential leak in the system. If there is a leak, the units



Permalog Data Collection

patroller is used to pick up the alarm signals at the various units placed within the system. A correlator can then be used to determine the location of the leak within the pipe.

The intent is to capture information regarding leaks that the system operations staff may be unaware of. The theory is that not all leaks will surface; some leaks will remain below ground level and can leak for a long time before detection. With a more proactive approach to leak detection, it is hoped that more leaks can be found and that the unaccounted for water losses can be reduced.

The EFC's role in this project is two fold: 1) to investigate the economics of using the FCS technology within the system to improve overall asset management and water conservation in the system, and 2) to investigate 5 years worth of leak data (FY 00 to FY 04) to provide a more complete picture of the current leak situation within the system.

The first portion of this study is similar to work that the EFC did for the City of Albuquerque when it was investigating a non-destructive pipe evaluation technology. The second portion also builds upon previous work of the EFC when it analyzed 5 years worth of leak data and provided a profile of leakage within the City water system. This project should be completed within 2005.

### **Pilot Project: Feasibility Analysis of Water Supply for Small Public Water Systems**

Under a subcontract with Parsons Infrastructure and Technology Group, Inc., the NM EFC participated in a pilot project to identify and analyze alternatives for small drinking water systems that are not in compliance with drinking water regulations. The particular role the NM EFC had in this effort was to evaluate the capacity of three small groundwater systems in the Wichita Falls area of Texas. In addition, the NM EFC assisted in the evaluation of the financial condition of the water systems. This project was completed between July and October of 2004.

### **Water System Collaboration Pilot Project for New Mexico**

The NM EFC received a contract from the NM Department of Finance and Administration to work with three groups of water systems within the state to determine if these systems would agree to any type of collaboration. This collaboration could include water resource planning, drought management, water conservation, managerial sharing, sharing of operators, sharing of water rights or supply or many other possible ideas. The collaboration was open to whatever the group wanted it to be. The NM EFC teamed up with Rural Community Assistance Corporation (RCAC) and New Mexico Rural Water (NMRWA) to complete this project. In addition, several state agencies formed a management team to assist with direction for the project, including: Office of State Engineer, Local Government Division, New Mexico Environment Department, and New Mexico Finance Authority.

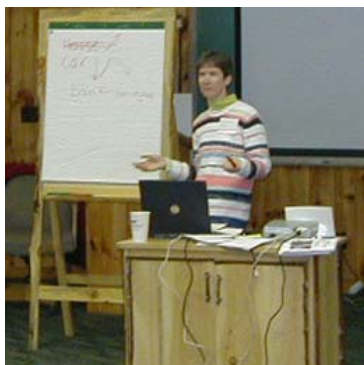
The areas chosen for the pilot project included: El Rito in north central New Mexico, Carlsbad area in southeastern New Mexico, and northern Dona Ana County in south central New Mexico. The El Rito group signed an agreement to work together and is in the process of dissolving the separate systems and becoming one entity. They are also working on sharing water rights and supply. In Carlsbad area, Eddy County decided that the project should be expanded to include all water systems in the County and received a large grant to conduct a planning study for the entire County. In Dona Ana County, the systems have decided to work on their wastewater issues first, so the water collaboration was put on hold pending the completion of the wastewater project. This project was completed in June 2004.

## Water System Collaboration Pilot Project for New Mexico

As a follow-on to the pilot project discussed above, the NM EFC received a second contract to assist an additional 10 clusters of water systems with collaborative efforts. The groups are spread out in New Mexico and range in size from approximately 5 water systems to more than 40 water systems. The issues vary significantly from group to group as well as the reason why the group has an interest in collaboration. This project involves the same partners as the Pilot (RCAC and NM RWA) and the same state management committee. This is a major new initiative within the state to provide insight into potentially better ways to plan for water supply, reduce water demand, fund water system improvements, and manage or operate water systems, particularly smaller water systems. This project began in August 2004 and will be completed in June 2005.

## Public Management and Finance Program (PMFP)

For the past several years, the NM EFC has collaborated with the Syracuse EFC on the Public Management and Finance Program. This program uses an approach that works very well with small systems and is one that the NM EFC believes would benefit NM communities. The EFC strongly desires to bring this program to the New Mexico and Region 6. Thus far, the NM EFC's participation in the Syracuse EFC events is intended to provide several benefits: 1) demonstrate the collaborative ability of the individual centers, 2) build the skills of the NM EFC to be able to bring this project to NM, and 3) share expertise gained in Region 6 with Region 2 and vice versa. This past year, the NM EFC participated in the March PMFP event in Minnowbrook, New York. The NM EFC presented a workshop on asset management and participated in the community simulations. In addition, the Syracuse EFC Director traveled to New Mexico to help present the concept of the PMFP program to New Mexico officials.



The PMFP offers hands-on technical assistance to rural communities through the development of teams of technical assistance providers. At the March 2004 PMFP event, the teams were composed of representatives from accomplished nonprofit, academic, government, and private organizations that have established histories in providing technical assistance to rural communities. These organizations were brought together to provide information, technical assistance and support to small communities in need of assistance, particularly in the area

of water and wastewater infrastructure.

## NEW INITIATIVES FOR 2004

The new initiatives for the NM EFC are highlighted below. These initiatives build upon the work efforts of the NM EFC for the past several years.

### **Advanced Asset Management**

The NM EFC embarked on a new initiative to assist with the promotion and implementation of advanced asset management for smaller water systems. Advanced Asset Management is included as one of EPA's key elements in its approach to addressing the Infrastructure "Gap." The Gap is the amount of money needed to address the Nation's infrastructure needs minus the current available funding. Advanced Asset Management is an approach designed to optimize a water or wastewater system's infrastructure management. It includes strategies to establish the optimal point of infrastructure replacement and when to determine whether a system is financially better off with rehabilitation or repair. The development and implementation of Advanced Asset Management strategies for water systems will help reduce overall life cycle costs and help decrease the financing gap.

Much of the information provided thus far is geared to larger water utilities. There is a need to provide an approach for smaller water systems. A goal of the NM EFC is to develop a strategy for Advanced Asset Management for smaller water systems.

### **Arsenic Pilot Project**

The NM EFC will be working with a Tribal water system to test a new technology for Arsenic removal. This pilot project will be fully funded by the supplier and will be sampled weekly to determine the effectiveness. This project is anticipated to begin in the spring of 2005.

### **Public Management Finance Program (PMFP)**

The NM EFC has been working with the Syracuse EFC to try to bring the PMFP concept to the State of New Mexico. The efforts over the past few years have not been successful, but the NM EFC has been able to conduct some small PMFP-like events. The NM EFC will be working with the Syracuse EFC and the NM Rural Development office to try to bring this very important program to the state and the region in 2005.

## EFC NETWORK COLLABORATIONS

The NM EFC has collaborated with other EFCs this past year on a variety of projects and proposals. Those collaborations are listed below.

Project	EFCs Included in Collaboration
Public Management Financing Program	Syracuse EFC (lead), EFC9, <a href="mailto:EFC@UNC">EFC@UNC</a> , Maine EFC, UNM EFC
Resource Based Source Water Protection	UNM EFC (lead), Syracuse EFC, Maryland, Boise State EFC, and EFC@UNC
Rate Setting	Syracuse EFC, Maryland EFC
Water System Security Proposal	NM EFC (lead), Syracuse EFC, Boise State EFC, <a href="mailto:EFC@UNC">EFC@UNC</a> , Louisville EFC, Maryland EFC, EFC9

## CONFERENCES

Name of Conference	Date and Location	EFC Involvement
Advanced Asset Management Workshop	January 28 – 29, 2004 San Antonio, TX	Participated in the Conference
Environmental Financial Advisory Board Meeting	March 9 - 10, 2004 Washington, D.C.	Participated in Board Meeting
Environmental Finance Center Network Directors Meeting	March 10 – 11, 2004 Washington, D.C.	Participated in Meeting
Public Management Finance Program Workshop	March 1 – 2, 2004 Minnowbrook, NY	Presented Session at Workshop
IHS Annual Workshop	March 4, 2004 Durango, CO	Made Presentation and Participated in Workshop
Tribal Drinking Water Intensive, EPA Region 9	May 5 – 6, 2004 Reno, NV	Presented Workshop
Unified Source Water Protection Meeting/Workshop	June 24, 2004 Washington, D.C.	Participated in Workshop, Made Presentation on EFCN Project
EPA Capacity Development Conference	July 20 - 22, 2004 Denver, CO	Made Presentation and Participated in Workshop
Environmental Financial Advisory Board Meeting	August 16 - 17, 2004 San Francisco, CA	Participated in Board Meeting
EFC Network Directors Meeting	August 17, 2004 San Francisco, CA	Participated in Meeting
EFAB Affordability	August 18, 2004	Participated in Workshop

Name of Conference	Date and Location	EFC Involvement
Workshop	San Francisco, CA	
New Mexico Drought Summit 2004	September 27 – 28, 2004 Albuquerque, New Mexico	Attended Summit
Association of Drinking Water Administrators Annual Conference	October 4 – 6, 2004 Austin, TX	Made Presentation, Participated in Conference
Council of Infrastructure Financing Agencies Annual Conference	November 8 - 9, 2004 San Diego, CA	EFC Participated in Conference
2004 New Mexico Data User Conference	November 17, 2004 Albuquerque, New Mexico	Attended Conference